



K. Ramsey, Humboldt National  
Forest, in L.H. 1997

**HUMBOLDT - TOIYABE NATIONAL FORESTS  
NORTHEAST NEVADA ECOSYSTEM  
NNECO Coordination Center  
2035 LAST CHANCE ROAD  
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MESSAGE: \_\_\_\_\_

File Code: 2670

Date: October 15, 1997

Subject: Fisheries Review of East and West Forks Jarbidge River.

To: The Files

Dan Duffield, the new Fisheries Technical Biologist for Region 4, accompanied me into the East and West Forks Jarbidge River on October 6-8. I had requested his assistance in assessing fine sediments in available spawning gravels in the two rivers, and in identification of redds and possible redde in the two rivers.

We spent a short partial day on the East Fork on the 6th, from Robinson Hole downstream a short distance on private lands just below the Forest boundary. That day we discussed initial observations on presence of multiple spring areas along the East Fork, livestock effects in the riparian zone, channel substrate stability based on shingling and periphyton, in-channel depositional sites for spawning gravel-sized materials, channel type and depositional bars of cobble-sized materials. Weather was cool and rainy by the time we departed the area in late afternoon.

We spent a full day on the East Fork on the 7th, again looking at substrate stability, potential spawning areas and relative availability of spawning-sized materials, identifying fish species observed, and channel type. I counted Large Woody Debris and main channel pools from the ford crossing at the Forest Boundary upstream to about .25 miles inside the Wilderness boundary, a distance of approximately 2 miles. Water temperatures were recorded throughout the day as well. The previous day's rain turned into snow overnight, the air temperature rose into the upper 40s on the 7th. At the elevations where we were (~6000-6200 feet), precipitation had remained rain, but had turned to snow above 7000 feet the previous night. Snowline retreated up the mountain during the day on the 7th, and was at approximately 7800-8000 feet by day's end.

#### East Fork Results:

The East Fork varied between B3 and C3 channel morphology in the reach surveyed. Channel width ranged between 16 and 18 feet (excepting the beaverdam complex inside the Wilderness), and averaged 16+ feet wide low-flow wetted width by visual estimate, widening to ~20 feet just above the ford at Robinson Hole.

Numerous spring areas on terraces within private land above and below the ford crossing at Robinson Hole. All ephemeral drainages were flowing water on 10/7, including those not showing defined channel on topo maps.

Cobble/boulder substrate appeared highly stable throughout, based on extremely

noticeable shingling and 70-100% coverage by periphyton.

Spawning-sized gravels and finer sediments accumulate predominantly on sides of channel from within lowflow channel and above bankfull stage. Very little accumulates in ideal locations for spawning, where intergravel oxygenated flow can occur. A shovel test in one deposit along the channel margin of the East Fork was taken. Dan Duffield, very experienced with this methodology, estimated the sample contained ~20% fine gravels and sands. This level of fines has been generally determined to be a threshold for salmonid egg survival. Increases in fines above this level results in sharp declines in survival for salmonid eggs and fry.

Water temperature remained at 8°C throughout the day as we moved upstream. High air temperature was estimated to be in upper 40's-low 50's Fahrenheit.

Flow volume was estimated to be up to 50% greater in the section of the East Fork surveyed, relative to the flow at Pine Creek upstream in the West Fork.

Redband of multiple age classes were observed as we moved upstream. We did not see many fish. Some intermittent side channels were observed, and contained 1 or more young trout (1-3 inches long) on this date. Inch-long juveniles corresponded to the size of the young salmonid I observed adjacent to Pine Creek Campground on 10/2/97. All salmonids less than 2 inches long were presumed to be spring-early summer spawned redband if visual observation could not verify the species. A limited number of mature redband were observed in a few pools.

Bull trout were not observed in the East Fork. No redds or possible redds were identified, though search was conducted throughout the day for fish and for spawning material-sized deposits in suitable locations. Based on our observations throughout this 2-mile stretch of river, gravels in the East Fork principally accumulate along channel margins. We observed little to no gravel pockets in ideally-situated spawning sites where intra-gravel oxygenation would readily occur (e.g. pool tails).

Massive beaverdam complex just within the wilderness. Multiple channels everywhere, been there for many years. Possible upstream barrier at low flow. Did not ascertain whether complex provided fish passage on this date.

Old woodcutting was evident both below and inside the Wilderness boundary, primarily of juniper post-pole sized trees inside the Wilderness, west side of the river. Below the Wilderness, old cutting was most evident along the east side trail, which has not been maintained for some time.

Fire (1988 or 89 event) burned both sides of river bottom and up west side of canyon, from Robinson Hole to .25 miles into Wilderness, possibly further but we did not go further upstream this date. A few pieces of LWD on river were partially burned. Estimated acreage observed burned = ~ 400+ acres.

Large Wood: (Channel Width Class 3 in Overton et al 1995: 15-20 feet)

<u>Actual</u>	<u>Expected</u> (per Overton et al 1995)	<u>INFISH RMOs</u>
11-12/mile	63-202/mile	20/mile

Pools: (Channel Width Class 3 in Overton et al 1995: 15-20 feet)

<u>Actual</u>	<u>Expected</u> (per Overton et al 1995)	<u>INFISH RMOs</u>
21-22/mile	24-31/mile	56/ mile

Of the 43 pools counted in the East Fork, 14 occurred in the .25 miles within the Wilderness. At this rate, pools averaged 56 pools/mile within the Wilderness, and 16-17 pools/mile outside the Wilderness, even though no road above Robinson Hole.

Two of the largest pools observed, contained mature redband. These pools were carved from smooth bedrock.

West Fork Jarbidge River observations, 10/8/97:

This day was devoted primarily to searching for bull trout, spawning materials, and redds, principally from Pine Creek Campground upstream on the West Fork.

Water temperature was recorded once, just below Snowslide Trailhead, at 1430. Temperature was 5.5°C. We estimated maximum air temperature this date as mid-50's Fahrenheit. Snow had not completely melted on lower slopes adjacent to the river, in the Wilderness on 10/8/97, from snowfall two days previous. Elevation was ~7000 feet.

Spring/seep areas were identified above Dry Gulch, below Sawmill Creek. Two had new beaver dams ponding water on terraces above the river. The third spring area was on a steep slope in the inner gorge of the channel upstream of the first two. Dry Gulch was flowing water this date, approximately twice the flow as observed last year on 10/2-3/96.

Several size classes of redband trout were observed during the day, principally in the Wilderness. Young-of-year, including several 1-inch size, were observed in intermittent side channels, particularly in the former channel in Section D of the project area. Several adult redband (7-8 inch size) were observed in a large beaver-dam pool above Dry Gulch. The beaver had also constructed 2 off-channel pools on springs on terraces either side of the river above Dry Gulch. This beaver activity was not observed in 1996 and appears to have been accomplished in 1997.

Three mature resident-sized bull trout (7-9 inches) were observed by Dan Duffield and myself in the same large beaver-dam pool where we observed mature redband. They were distinguished from the redbands by light spots on sides and light leading edges on pelvic fins. Behaviorally, the bull trout held closer

to the bottom of the pool, tolerated our presence better, displaying less spookiness than the redband and swimming closer to the shore where we were standing. The redband showed the red line, did not have light spots, presented uniformly colored pelvic fins at a visual distance of 3-10 feet in fairly clear water. They held position mid-column predominantly and behaved more spookily as they became aware of our presence.

This beaver dam appears to present a barrier to upstream fish passage at this time of year.

Spawning-gravel sized material and finer gravels and sands became a more prominent component of the low-flow channel substrate in the Wilderness, compared to below the Wilderness. Cobble remained the dominant substrate size class. As in the East Fork, gravels do not accumulate readily in ideal locations for spawning (e.g. in pool tails). They still accumulate primarily in quiet areas on channel margins. Cobble substrate began to give appearance of stability within the Wilderness, based on shingling and periphyton, but not as visibly stable as in the East Fork. We defined spawning-sized gravels as .5-1.5 inch median diameter.

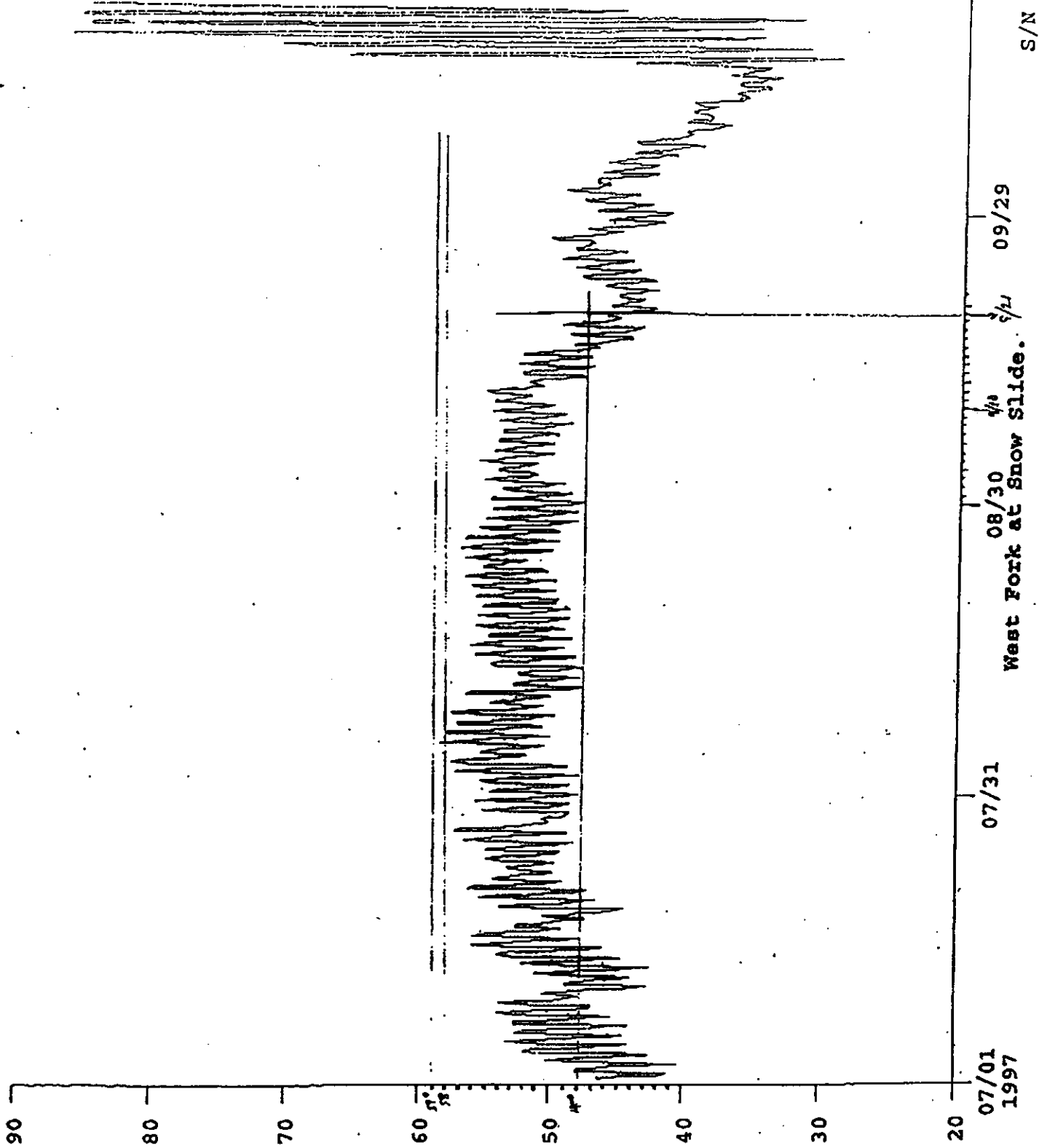
We found 2 "probable" redds above Dry Gulch, one in the tail area of a pool that had mostly filled in. Dan commented that if the sites were redds, that they were probably at least 2 weeks old, based on lack of recent disturbance. The possible redds were resident-sized. The other one was in a riffle.

Our survey ended approximately 50 yards below Sawmill Creek confluence, due to lack of time to continue, thus we did not investigate the upper pools where 3 resident-sized bull trout were observed in USFS surveys in October 1996.

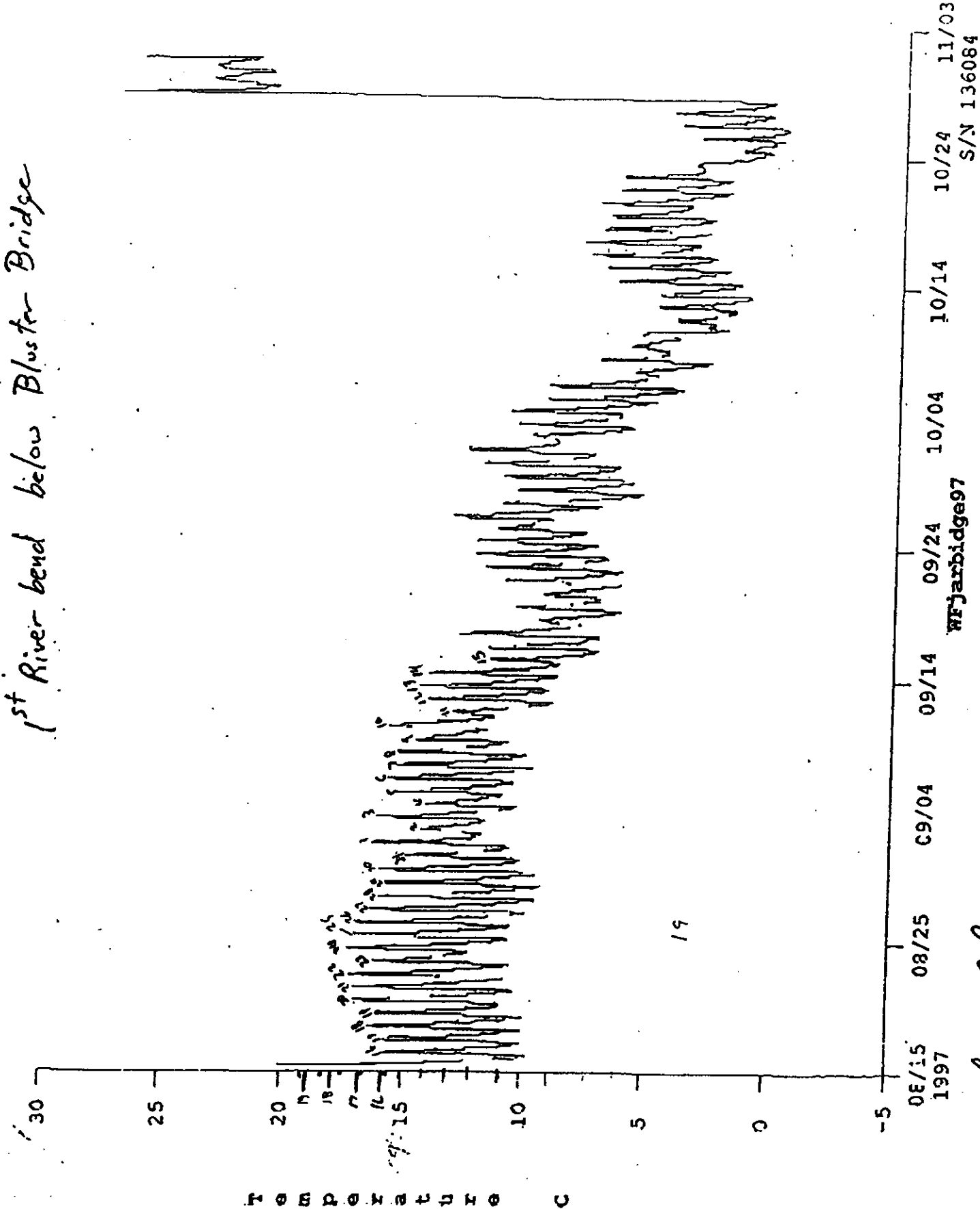


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Humboldt and Toiyabe National Forests

From Gary Johnson



1st River bend below Bluster Bridge



WFjarbridge97

Removed from river on 10/29/97. Afternoon, ~ 1pm.